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## REMARKS

This is intended as a full and complete response to the Final Office Action dated April 26, 2005, having a shortened statutory period for response set to expire on July 26, 2005. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-17 and 37-40 remain pending in the application and are shown above. Reconsideration of the rejected claims is requested for reasons presented below.

### I. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a) – CLAIMS 1-5, 7-13, 15-17 AND 37-38.

Claims 1-5, 7-13, 15-17 and 37-38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over WO 99/54920 (WO '920), in view of *Miller et al.* (U.S. 4,801,865, issued January 31, 1989). Applicant respectfully traverses the rejection.

The Examiner states that WO '920 fails to teach attachment of contact pins by brazing. The Examiner further states that it would have been obvious and within the ordinary skill in the art at the time the invention was made to have modified WO '920 to use brazing to attach the contact pins of WO '920 because *Miller et al.* teaches the application of contact pins by brazing which would have resulted in a more continuous bond.

WO '920 teaches a metal impregnated elastomer ring 350 generally comprising an outer elastomer ring 352, an inner elastomer ring 354 and a metal ring 356 sandwiched between the inner elastomer ring 352 and the outer elastomer ring 354. Preferably the metal ring 356 comprises a plurality of individual metal wires 358 extending at a slanted angle  $\alpha$  from a top surface of the elastomer ring 350 to a bottom surface of the elastomer ring 350. (*Miller et al.*, pg. 15, lines 10-18) Essentially, WO '920 teaches that the individual metal wires 358 are held in place because they are sandwiched between two elastomer pieces therefore there is no need for an attachment method to keep the wires in place. Further, as demonstrated in Fig. 9, there is no joint to braze the wires to. As a result, it cannot be obvious to braze when there is nothing to braze the wires to nor is any attachment method required.

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Further, WO '920 relies on the non-permanent connection of the pins to the cathode clamp ring to enable compression of the elastomer ring to form a seal. Rigidly affixing the metal wire to the cathode clamp ring would require a substantial reconstruction and redesign of the elements shown in WO '920 as well as a change in the principle under which the elastomer ring construction was designed to provide the compressible surface for sealing and the compliant contact. The brazing of the pin in the pocket or slot prevents relative movement between the pin and the annular conductive body in order to provide stability to the pin for contacting a substrate.

In addition, as discussed in the Response to Office Action dated October 13, 2004 the claimed subject matter is not motivated or suggested by the combination of WO '920 in view of *Miller et al.* because *Miller et al.* is neither in the Applicant's field of endeavor nor reasonably pertinent to the particular problem.

Therefore, WO '920 in view of *Miller et al.* fails to teach, show, or suggest at least one electrical contact pin having a portion brazed in a receiving pocket or slot formed in an annular conductive body as recited in claims 1, 9, and 17, and claims 2-5, 7-8, 10-13, 15-16, and 37-38 dependent thereon. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claims 1-5, 7-13, 15-17, and 37-38.

## II. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a) – CLAIMS 6 & 14.

Claims 6 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over WO '920 in view of *Miller et al.* and further in view of *Dordi et al.* (U.S. 6,635,157, issued October 21, 2003). Applicant respectfully traverses this rejection.

The Examiner states that WO '920 in view of *Miller et al.* fails to specifically teach a contact made of platinum.

Applicant submits that the claimed subject matter is not motivated or suggested by combination of WO '920 in view of *Miller, et al.* and further in view of *Dordi, et al.* at least for the reasons described above regarding claims 1 and 9, upon which claims 6 and 14 respectively depend. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claims 6 and 14.

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**III. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a) – CLAIMS 1-2, 7, 9-10, 15 & 17.**

Claims 1-2, 7, 9-10, 15 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Crafts et al.* (U.S. 5,807,469, issued September 15, 1998), in view of *Miller et al.* Applicant respectfully traverses the rejection.

The Examiner states that *Crafts et al.* fails to teach attachment of contact pins by brazing. The Examiner further states that it would have been obvious and within the ordinary skill in the art at the time the invention was made to have modified *Crafts et al.* to use brazing to attach the contact pins because *Miller et al.* teaches the application of contact pins by brazing which would have resulted in a more continuous bond.

*Crafts et al.* teaches that tab 314 (referring to Fig. 10) has a first portion 316 with an end 318 for coupling to an electrical current supply. Tab 314 has a second portion 318 integral with the first portion. The second portion has end 322, for frictionally contacting the electrical conductive contact of the target surface (not shown). The first portion has a width larger than the width of the second portion. The shoulder 320 is formed at the junction of these two portions. This shoulder acts as a stopper. When the cathode contact device 20 is installed within the cup 2, illustrated in FIG.10, the shoulder 320 rests against the outside periphery of the cup, thus, providing the means for positioning the contact precisely within the recess of the top surface of the cup. (*Crafts et al.*, col. 9, lines 18-26) Tab 322 will frictionally contact the electrical conductive contact of the target surface but there is no indication that the cup 2 or the base of the cup disclosed in *Crafts et al.* are conductive bodies since they do not deliver the current to the cathode contact devices – current is delivered to the cathode contact device via tab 322. *Crafts et al.* does not teach, show, or suggest any connection between the tab 322 and the cup 2. The cathode contact tabs rest in discrete recesses formed on the top surface of the cup. As a result, it cannot be obvious to use brazing to connect two pieces together when the reference does not require any connection between the two pieces.

Furthermore, the brazing of the pin in the pocket or slot provides repeatable, controlled conductance between the pin and the annular conductive body used in the present application to deliver current and voltage to the pin. However, *Crafts et al.*

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teaches away from providing conductance between cathode contact devices disclosed therein and a cup or a base of a cup that the cathode contact devices are mounted on. Specifically, the cathode contact devices disclosed in *Crafts et al.* do not receive current and voltage from the base of the cup and a dielectric layer (reference character 226 in Figure 9) separates a conductive contact (202) from the base of the cup (3). Rather, the cathode contact devices have a plurality of arms or extending portions that couple to an electrical current supply. Thus, modification of *Crafts et al.* to use brazing to attach the cathode contact devices to the cup or base of the cup would change the principle of operation of *Crafts et al.* Specifically, a conductive attachment between the cathode contact device and the cup would require a substantial reconstruction and redesign of the elements shown in *Crafts et al.* as well as a change in the basic principle under which the *Crafts et al.* construction was designed to operate.

In addition, as discussed in the Response to Office Action dated October 13, 2004 the claimed subject matter is not motivated or suggested by the combination of *Crafts et al.* in view of *Miller et al.* because *Miller et al.* is neither in the Applicant's field of endeavor nor reasonably pertinent to the particular problem.

Therefore, *Crafts et al.* in view of *Miller et al.* does not teach, show, or suggest an apparatus for electro-chemical deposition that includes at least one electrical contact pin having a portion brazed in a receiving pocket or slot formed in an annular conductive body, as recited in Applicant's claims 1, 9 and 17, and claims 2, 7, 10 and 15 dependent thereon. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claims 1-2, 7, 9-10, 15 and 17.

#### IV. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a) – CLAIMS 6 & 14.

Claims 6 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Crafts et al.* in view of *Miller et al.* and *Dordi et al.* Applicant respectfully traverses the rejection.

Applicant submits that claims 6 and 14 are patentable over *Crafts et al.* in view of *Miller et al.* and *Dordi et al.* at least on the traversal described above regarding claims 1 and 9, upon which claims 6 and 14 respectively depend. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claims 6 and 14.

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#### **V. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a) – CLAIMS 1-17 & 37-38.**

Claims 1-17 and 37-38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Dordi et al.*, in view of *Miller et al.*, and further in view of WO '920. Applicant respectfully traverses the rejection.

The Examiner states that *Dordi et al.* teaches an electro-chemical deposition system comprising an annular conductive body adapted to support the substrate. Further, the Examiner states that even though the contact pins of *Dordi et al.* are rigidly affixed to the conductive body, *Dordi et al.* does not specifically teach brazing of the contact pins. *Miller et al.* teaches that the application of contact pins by brazing would result in a more continuous bond.

*Dordi et al.* teaches that the conducting members 765 are defined by a plurality of outer electrical contact pads 780 annularly disposed on the flange 762, a plurality of inner electrical contact pads 772 disposed on a portion of the substrate seating surface 768 and a plurality of embedded conducting connectors 776 which link the pads 772, 780 to one another. (*Dordi et al.*, col. 11, lines 25-30).

Applicant submits that the claimed subject matter is not motivated or suggested by combination of *Dordi et al.* in view of *Miller et al.* and further in view of WO '920, because the combination does not teach a specific attachment method and therefore it does not suggest brazing. In addition, as discussed in the Response to Office Action dated October 13, 2004 the claimed subject matter is not motivated or suggested by the combination of *Dordi et al.* in view of *Miller et al.* and further in view of WO '920 because *Miller et al.* is neither in the Applicant's field of endeavor nor reasonably pertinent to the particular problem. Thus, Applicant respectfully requests withdrawal of the rejection and allowance of claims 1, 9 and 17, and claims 2-8, 10-16 and 37-38 dependent thereon.

#### **VI. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a) – CLAIMS 39-40.**

Claims 39-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Dordi, et al.*, in view of *Miller, et al.* Applicant respectfully traverses the rejection.

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The Examiner states that *Dordi et al.* further teaches that conductive body and the contact pins are made from different metals (col. 11, lines 58-67). The processing cell of *Dordi* further comprises an anode assembly (col. 19, lines 48-56, figure 6, 474) in a processing kit (figure 6, 420) and the electroplating solution connects the anode and plating surface to the substrate (col. 16, lines 54-61).

*Dordi et al.* teaches that the substrate seating surface 768 (referring to Figures 7-10) comprises an isolation gasket 782 disposed on the insulative body 770 and extending diametrically interior to the inner contact pads 772 to define the inner diameter of the contact ring 466. The isolation gasket 782 preferably extends slightly above the inner contact pads 772. FIGS. 8 and 9 show an alternative embodiment. In the latter embodiment, the insulative body 770 is partially machined away to expose the upper surface of the connecting member 776 and the isolation gasket 782 is disposed thereon. Thus, the isolation gasket 782 contacts a portion of the connecting member 776. (*Dordi et al.*, col. 12, line 45, col. 13, line 20) As shown in Figures 8-10 *Dordi et al* teaches an isolation gasket 782 disposed on top of the contact pads 772. As a result, *Dordi et al* in view of *Miller et al.* fails to teach, show or suggest a seal coupled to the contact ring proximate the inner diameter and disposed inward of the electrical contact pin, the seal adapted to provide sealing contact with the substrate.

Further, as discussed in the Response to Office Action dated October 13, 2004 the claimed subject matter is not motivated or suggested by the combination of *Dordi et al.* in view of *Miller et al.* because *Miller et al.* is neither in the Applicant's field of endeavor nor reasonably pertinent to the particular problem. Accordingly, *Miller et al.* does not suggest or motivate modification of the other reference. Thus, Applicant respectfully requests withdrawal of the rejection and allowance of claims 39-40.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the Final Office Action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this Final Office Action.

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Having addressed all issues set out in the Final Office Action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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